

Out of Sight, Out of Mind: It All Adds Up

Note: Read the definitions for solid waste, trash and garbage in the Glossary of Terms. For these activities, initially consider recyclables as part of the trash. Once items are identified and recycled, they will no longer be trash.

Learning Objectives: To help students visualize how much solid waste is generated for each person in Wisconsin and understand how the number of people living in our state and country affects this amount.

Subjects: Mathematics, Social Studies, Science, Environmental Education

Wisconsin Model Academic Standards:
SC C.4.2, SC C.8.1, M A.4.3, M D.4.2, M D.4.5, M D.8.4, SS D.4., D.8.11, EE A.4.1, EE A.4.2, EE B.8.20

Grades: 4-8



Materials: 14 pound bag of miscellaneous trash and recyclables (wash containers and avoid items with sharp edges), gloves, tarp to place trash on (optional)

Procedure:

First: Describe trash and list some examples.

Ask the students: What qualities does an item have that makes you decide it is trash? What different kinds of trash are there?

Next: Dump the 14 pound bag of trash (and recyclables) on the tarp on the floor.

Discuss with the students: Does this seem like a lot of trash? This much trash is thrown out each day for every person in Wisconsin. How do you feel about the fact that you are responsible for 14 pounds of trash that is thrown out each day?

Continue the discussion: If you make 14 pounds of trash each day, how many pounds do you make every week, month and year? Convert the annual number from pounds into tons. How many tons of trash do you make each year?

To help you visualize how much a ton weighs, ask if a student would like to volunteer how much they weigh. How many of that student would it take to make one ton? How many "students-worth" of trash do you make each year? How many people are in your family? If 14 pounds of trash are generated each day for every person, how many pounds or tons of trash does your family make every week, month and year? How do your buying habits affect the amount of trash you produce?



NOW THAT YOU'VE DISCOVERED THE AMOUNT
OF TRASH YOUR OWN CLASS GENERATES,
JUST IMAGINE HOW MUCH TRASH IS GENERATED
BY ALL THE CLASSROOMS IN WISCONSIN!

Out of Sight, Out of Mind:

Class
Trash

Materials: Trash generated by your class on a typical day (note: initially include recyclable items like paper, plastic, aluminum and glass in the trash weight and then subtract recyclables from the total weight afterward), tarp or sheet of plastic to put trash on (optional), rubber gloves, clear garbage bags, bathroom or grocery scale

Procedure: Collect and save the trash your class generates (in the classroom, art room, shop, lunch room, etc.) on a typical day. Wash jars and cans, place food trash in a sealed container, separate trash types into clear plastic garbage bags. You can save trash for more than one day if you wish. This will enable you to calculate the average amount generated by your class each day. Have students (either as a class or in groups) fill out the "Class Trash" worksheet as observations are made with the class's trash.

Note: Students will need to be familiar with the concepts of weight and volume in order to do the following activity and understand the implications. Consider using this activity as part of a mathematics lesson that addresses these concepts.

Learning Objectives: Students will calculate the amount and types of trash thrown out by their class at school and investigate where it is taken.

Subjects: Mathematics, Social Studies, Science, Environmental Education, Family and Consumer Education.

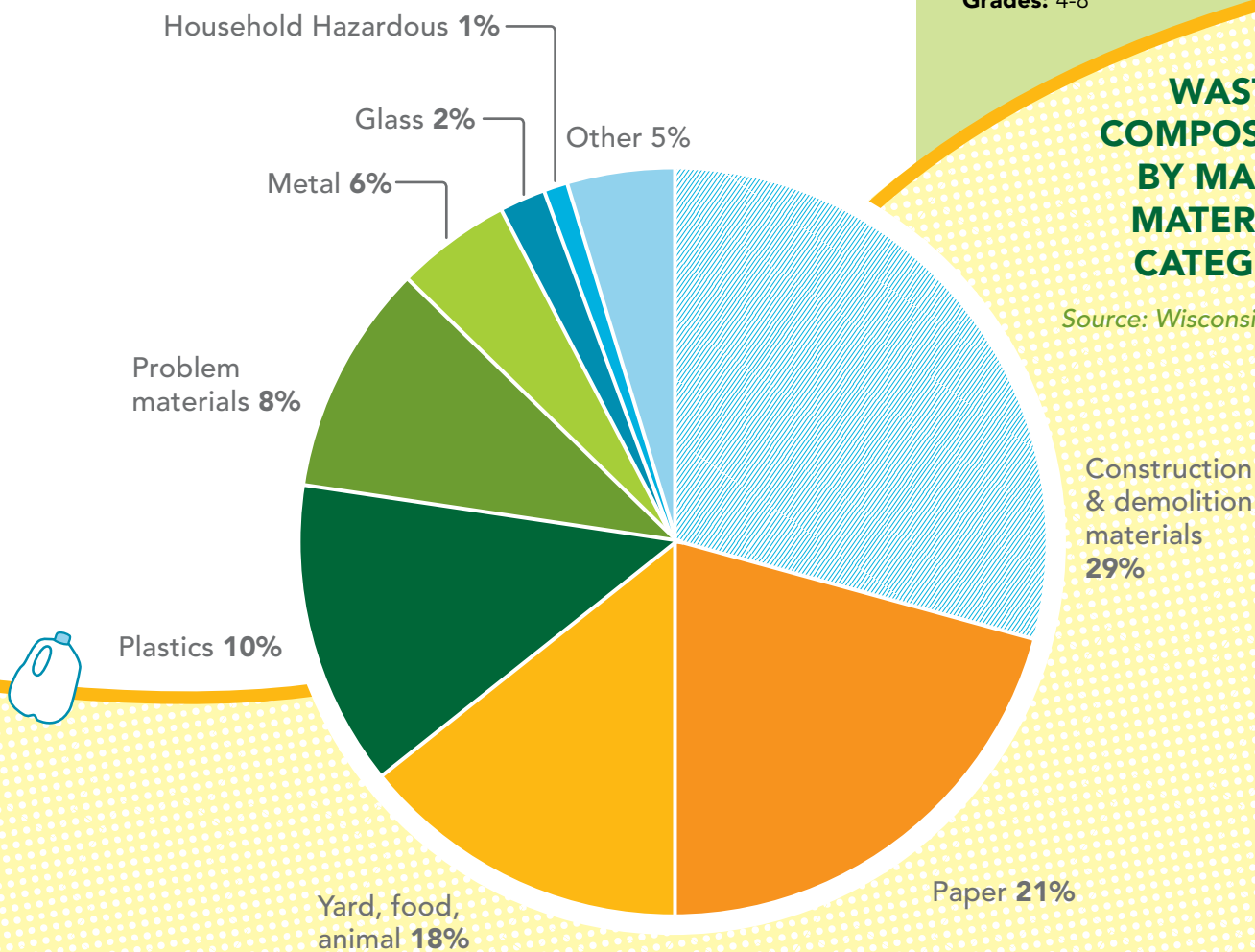
Wisconsin Model Academic Standards:

SC C.4.4, SC C.4.5, SC C.4.6, M D.4.2, M D.4.3, M D.4.3, M D.8.4, SS D.4.7, SS D.8.11, EE A.4.1-4, EE A.84, EE B.8.20, FCE introductory D.2 and D.3.

Grades: 4-8

WASTE COMPOSITION BY MAJOR MATERIALS CATEGORY

Source: Wisconsin DNR, 2007





OUT OF SIGHT, OUT OF MIND

CLASS TRASH

Class Worksheet, pg. 1

Name _____

1. List the items you throw in the classroom and lunchroom wastebaskets on a typical day.



2. Predict what four types of materials make up the greatest portion of the waste by:

Weight: 1. _____ 2. _____ 3. _____ 4. _____

Volume: 1. _____ 2. _____ 3. _____ 4. _____

Number
of items: 1. _____ 2. _____ 3. _____ 4. _____

3. After you have spread out the class's trash on a tarp on the ground, count the number of different items for each trash type (i.e., food waste, glass, plastic bags), and fill out the chart to the right. Place the trash, by type, in separate bags.


Trash Type	Number of items found in trash type
Food waste	
Paper	
Pencils/pens	
Aluminum	
Plastic	
Glass	
Paper bags	
Plastic bags	
Other (specify)	
Other	
Other	
Other	

4. What types of trash create most of the total class trash by number? What types/items could have been recycled instead of thrown into the garbage can?

5. Draw a bar graph to illustrate the amounts of the different trash types found. Be sure to highlight which types on the graph are recyclable.



6. Select the four types of trash you estimate make up most of the total trash by weight. Use one of the following methods to determine the exact or approximate weight of each type:
- If you have a grocery scale in your classroom, weigh the items.
 - If you have a bathroom scale you can weigh yourself holding the bag and then just yourself and subtract the two numbers to determine the weight of the trash.
 - If you don't have a scale, find objects in the classroom that are of a known weight. Compare the weights of your object and the class's trash (use a balance if you have one).

	Trash type	Weight estimate
#1		
#2		
#3		
#4		

**Estimated weight of
all of your class's trash:**

7. Calculate the volume of the trash and recyclables in each bag by measuring the width, length and depth of the items in it. How might volume differ if the glass, cans or boxes are crushed? Does weight change if volume changes?

8. How do your calculations compare with the predictions you made in question #1?
9. How much trash (minus recyclables) does your class throw out in a day, week, month and school year by weight, volume? How much recyclables does your class throw out in a day, week, month and school year by weight, volume?
10. How much space will one school year's-worth of your class's trash and recyclables fill if they are not compressed? Calculate the volume of your classroom. If you didn't remove any of your class's trash and recyclables from the classroom, how much of the room would be filled by the end of the year? How much room would be left for you?
11. Do you think your class makes a lot of trash? If not so much, explain reasons for your response.

GOING BEYOND

- Investigate where your school's trash and recyclables are taken.
- Pledge to reduce 5 percent of the average daily weight of your class's trash by finding ways to reduce waste. (i.e., composting lunch food waste, using discarded paper for scrap paper, using reusable containers in lunches, etc.)